the patients have an undesired positive phosphate balance despite the restriction (Hercz, G. et al., Kidney Int. Suppl. 22 (1987), 215-220).

2. Page 8, second paragraph:

For this reason phosphate binding agents that can be administered orally are preferably used as therapeutic agents which are intended to prevent the resorption of food phosphates in the gastrointestinal tract. Known substances with phosphate-binding properties are the calcium salts calcium acetate, calcium carbonate, calcium citrate, calcium alginate, calcium gluconate, calcium lactate and calcium sulfate, magnesium carbonate and magnesium hydroxide as well as aluminum hydroxide and aluminum carbonate. However, not all of these salts have gained therapeutic importance or been considered safe or efficacious. Aluminum hydroxide, calcium carbonate and calcium acetate have been used. However, these agents for enteric phosphate restriction may have undesired side effects. Thus when Al^{3+} compounds are administered chronically a microcytic anemia or encephalopathy can develop with a very poor prognosis or osteopathy can occur. A possible disadvantage of a long-term therapy with calcium salts is the development of hypercalcemia which is associated with calcification of blood vessels and soft tissues and gastrointestinal complaints (Dialysis Journal 37 (1991), 1-40).

3. Page 9, first paragraph:

In addition Burt, H. M. et al. (J. Pharm. Sci. 75 (1987), 379-383) describe anion exchangers which carry tertiary or quaternary amines as the functional group and adsorb inorganic phosphate in the intestinal tract. However, it is known that strongly basic anion exchangers such as for example cholestyramine (Johns, W. H., Bates, T. R., J. Pharm. Sci 59 (1970), 788 ff.) may also undesirably bind bile acids and hence their long-term use leads to hypovitaminosis.

4. Page 9, second paragraph, ending on page 12:

A common treatment for phosphorus retention is disclosed in U.S. Pat. No. 4,870,105, entitled Phosphorus binder, which discloses a calcium acetate phosphorus binder for oral administration to an individual for the purpose of inhibiting gastrointestinal absorption of phosphorous. It further discloses a method of inhibiting gastrointestinal absorption of phosphorous, comprising administering orally the calcium acetate phosphorus binder, preferably close in time to food and beverage consumption. However, side effects of calcium acetate may include acetic acid breath, stomach upset and gastrointestinal discomfort. Other

alternatives for treating phosphorus retention are shown in the following United States patents. U.S. patent No. 6, 160,016 entitled Phosphorus binder, discloses a calcium formate composition for oral administration to an individual for the purpose of inhibiting gastrointestinal absorption of phosphorous. It further discloses a method of inhibiting gastrointestinal absorption of phosphorous, comprising administering orally the composition, preferably close in time to food and beverage consumption. U. S. patent No. 6,103,709 entitled Therapeutically effective 1α,25-dihydroxyvitamin D3 analog, discloses a method for treatment of diseases caused by deficiency or overproduction of the vitamin D_3 metabolites by administering analogues of 1α,25-dihydroxyvitamin D_3. These are disclosed to be analogues that are selective agonists or antagonists for the genomic and rapid nongenomic cellular responses. It further discloses a pharmaceutical composition comprising 1α,25-dihydroxyvitamin D_3 analog. U.S. patent No. 5,939,406 entitled 18-substituted-19-nor-vitamin D compounds, discloses a class of vitamin D compounds, namely, 13-ethyl and 13-vinyl-18,19-dinor-vitamin D derivatives, as well as a general method for their chemical synthesis. The compounds have the formula: $C_{17}H_{22}O_2RR_6Y_1Y_2$, where Y_1 and Y_2, which may be the same or different, are each selected from the group consisting of hydrogen and a hydroxy-protecting group, R_6 is selected from the group consisting of an ethyl or vinyl radical, and where the group R represents any of the typical side chains known for vitamin D type compounds. These 18-substituted compounds are characterized by minimal intestinal calcium transport activity and minimal bone calcium mobilization activity resulting in novel therapeutic agents for the treatment of second hyperparathyrodism. These compounds also are disclosed as exhibiting pronounced activity in arresting the proliferation of undifferentiated cells and inducing their differentiation to the monocyte thus evidencing use as anti-cancer agents and for the treatment of diseases such as psoriasis. U. S. patent No. 5,753,706 entitled Methods for treating renal failure, discloses a method of controlling phosphate metabolism and metabolic acidosis in patients suffering from renal failure and associated hyperphosphatemia or patients predisposed to development of a hyperphosphatemic condition. The method comprises administering to a patient a ferric-containing compound selected from the group consisting of ferric citrate, ferric acetate, and combinations thereof. It discloses that a therapeutic benefit can be realized in accordance with such method by administering the compound orally to a patient to contact and bind with ingested phosphate in the patient's digestive tract, and thereby prevent its intestinal absorption. U.S. patent No. 5,597,815 entitled Prevention of hyperphosphatemia in kidney

disorder patients, discloses that 19-nor-vitamin D analogs, and particularly 19-nor-1 α,25-dihydroxyvitamin D_2, possess low calcemic and phosphatemic activity while also having the ability to suppress parathyroid hormone (PTH) production. It further discloses that the suppressive effect on PTH secretion of these 19-nor analogs without significant changes in serum calcium or serum phosphorus make them ideal tools for the treatment of secondary hyperparathyroidism in patients having kidney disorders. U. S. patent No. 4,308,264, entitled Stabilized, dilute aqueous preparation of 1α,25-dihydroxycholecalciferol for neonatal administration, discloses 1α,25-Dihydroxycholecalciferol, also known as 1α,25-dihydroxyvitamin D_3, calcitriol or $1\alpha,25(OH)_2D_3$, that occurs naturally in man as the active form of cholecalciferol or vitamin D_3. It further discloses that the natural supply of vitamin D_3 depends on the conversion of 7-dehydrocholesterol to vitamin D_3 in the skin by ultraviolet light. Vitamin D_3 is then converted to calcitriol in a two-step process in the liver and kidney before its acts on its target issue. U.S. patent No. 6,103,126, entitled Process for the selective elimination of inorganic phosphate from liquids by means of absorbent materials modified with polynuclear metal oxhydroxides, discloses the use of an adsorbent material modified with polynuclear metal oxhydroxides for the selective elimination of inorganic phosphate from liquids, in particular from body fluids containing protein such as whole blood, plasma, liquid contents of the intestine as well as from dialysis fluid, as well as a process for the production of a pharmaceutical agent for oral application for the selective removal of inorganic phosphate in which an adsorbent material used is coated with a layer resistant to gastric acid or dispensed into an acid-resistant capsule. It further discloses that in order to selectively eliminate inorganic phosphate in an extracorporeal perfusion system, a body fluid such as whole blood or plasma is passed over one of the adsorbent materials. U.S. patent No. 4,689,322, entitled Pharmaceutical products, calcium mixed salts of polymeric, anionic carboxylic acids and/or their esters of sulfuric acid, and methods for their preparation and use, discloses a pharmaceutical product which contains at least a calcium salt or a calcium mixed salt of a natural or chemically modified polymeric, anionic carboxylic acid and/or an ester of sulfuric acid, and additive materials and/or an ester of sulfuric acid, and additive materials and/or carrier materials. There are further disclosed calcium salts, and methods of preparation thereof, comprised of polymannuronic acid, polygalacturonic acid, polyglucuronic acid, polyguluronic acid, the oxidation products of homoglycans, the oxidation products of heteroglycans, or their mixtures, for controlling the levels of phosphate,

'calcium and iron in patients with chronic uremia and/or the control of the oxalate and/or phosphate of the blood in kidney stone prophylaxis.

5. Page 13, second paragraph, titled 'Summary of the Invention':

A method for inhibiting gastrointestinal absorption of phosphorous in an individual, comprising orally ingesting a quantity of calcium glutarate sufficient to bind with phosphorous in the gastrointestinal tract. The calcium glutarate is present in an amount sufficient to provide between about 400mg to about 1500 mg of calcium as calcium glutarate. The calcium glutarate may be in tablet form, gelatin capsule form, effervescent form or in liquid form. The calcium glutarate may be administered at mealtime. An orally administerable pharmaceutical composition is used in the treatment of hyperphosphatemia and for preventing the formation of phosphate- and oxalate-containing kidney stones which comprises as the principal active ingredient a therapeutically effective amount of calcium glutarate combined with a pharmaceutically acceptable carrier in the form of beads, tables, liquid, capsules, powders, dragees or pills.

6. Page 15, second full paragraph:

The calcium glutarate has a density of about 0.65 gm/cc. It has about 21.6 per cent elemental calcium. Its formula is $[OOC\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{-}COO]Ca$. The reaction for the formation of calcium glutarate is:

$$CaCO_3 + HOOC\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{-}COOH \rightarrow [^-OOC\text{-}CH_2\text{-}CH_2\text{-}CH_2\text{-}COO^-]Ca^{2+} + CO_2 + H_2O$$

7. Page 17, first full paragraph:

The following in-vitro tests were conducted to test the solubility and ability of calcium glutarate to bind with phosphates. The tests included analysis for monobasic, $Ca(Na_2PO_4)_2$, dibasic, $CaNaPO_4$, and tribasic, $Ca(PO_4)_2$ binding. The three examples are as follows.

8. Page 17, second full paragraph:

An aqueous solution of calcium glutarate was mixed with a twice over molar solution of sodium phosphate. A suspension formed which was filtered by a vacuum through a 0.45-μm nylon filter. The resulting filtrate was assayed for free calcium by atomic absorption spectrometry. The percent of calcium recovered in solution was 0.1%. The test showed that almost all of the calcium was in the practically insoluble form of calcium phosphate.

9. Page 18, first full paragraph:

Calcium glutarate does not appear to form undesirable complexes. It has a pleasant taste so it can be taken in the form of a tablet, or it may be taken as a liquid. Because of the ability of the calcium glutarate to easily and rapidly bind with the phosphates a relative small dosage is possible under usual circumstances. Calcium glutarate has the qualities that are desirable in binding phosphates. It is highly soluble so it should be effective even when there is little stomach acid. Virtually all of the calcium glutarate would appear to readily bind with available phosphates to form insoluble salts that can be passed through a patient's digestive system. A reasonable excess of calcium glutarate beyond that needed to bind with free phosphates would appear to pose no problem and would be available to provide calcium to treat or prevent osteoporosis or other diseases that are treated with calcium supplements. It would also appear to not be a risk for the formation of kidney stones.